REMARKS

I. General

Claims 1-3, 5-19, and 21-25 were pending in the current application, and all of such claims are rejected in the Office Action mailed June 23, 2004. The issues raised in this Office Action are:

- Claims 1-2, 7-11, and 14-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Number 5,515,181 issued to Iyoda et al. (hereinafter "*Iyoda*") in view of U.S. Patent Number 6,577,339 issued to Thompson et al. (hereinafter "*Thompson*");

- Claims 17-18 and 21-23 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Iyoda* in view of U.S. Patent Number 6,047,130 to Oles et al. (hereinafter "*Oles*");

- Claims 3, 5, 12-13, 19, and 24 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Iyoda* in view *Oles* and further in view of U.S. Patent Number 6,115,482 to Sears et al. (hereinafter "*Sears*").

Applicant respectfully traverses the outstanding rejections, and requests reconsideration and withdrawal thereof in light of the remarks contained herein.

II. Claim Rejections Under 35 U.S.C. § 103(a) over *Iyoda* in view of *Thompson*

Claims 1-2, 7-11, and 14-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Iyoda* in view of *Thompson*. Applicant respectfully traverses this rejection as discussed further below.

To establish a prima facie case of obviousness, three basic criteria must be met. *See* M.P.E.P. § 2143. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the applied combination of references must teach or suggest all the claim limitations. Without conceding any other criteria, Applicant respectfully asserts that the applied combination of *Iyoda* and *Thompson* does not satisfy the third criteria.

Independent Claim 1

Independent claim 1 recites a method comprising:

> illuminating a target scan area below said look-down digital imaging device;
> capturing video data of said target scan area;
> displaying said captured video data on a display; and
> sweeping an image raster line once across said target scan area, thereby capturing said resulting high-resolution digital image of an original object.

Applicant respectfully submits that the applied combination of *Iyoda* and *Thompson* fails to teach or suggest at least the above elements of independent claim 1.

First, contrary to the assertion by the present Office Action, *Iyoda* fails to teach or suggest capturing video data of a target area. The current Office Action asserts that *Iyoda* teaches "capturing video data of said target scan area, (as shown in fig 11, camera 1 has been focused or image has been targeted to the image area 103b of fig 1, which is need to be scanned)." Item 2 on page 2 of Office Action. However, *Iyoda* does not teach or suggest capturing video data of a target scan area. Fig. 11 of *Iyoda*, which is cited in the above-quoted portion of the Office Action regarding this element, shows "a perspective view illustrating the configuration of the whole of the image reading apparatus" as specified at column 2, lines 66-67 of *Iyoda*. Thus, Fig. 11 of *Iyoda* shows an example configuration of an image reading apparatus, but fails to teach or suggest capturing video data of a target scan area.

Further, as mentioned above, claim 1 recites in part "sweeping an image raster line once across said target scan area, thereby capturing said resulting high-resolution digital image of an original object" (emphasis added). Neither *Iyoda* nor *Thompson* teaches or suggests this element of claim 1. *Iyoda* fails to teach or suggest this element of claim 1, but instead teaches an image capture technique that involves capturing multiple images. That is, both the whole image (pre-scan) and the division images of the original 103A are captured in *Iyoda*. *See e.g.*, Col. 7, lines 21-27. The current Office Action concedes, at page 3 thereof, that *Iyoda* fails to teach this element of claim 1, but relies upon *Thompson* as supplying this element.

However, *Thompson* also fails to teach or suggest sweeping an image raster line once across the target scan area, thereby capturing a resulting high-resolution digital image of an original object. In relying upon *Thompson*, the current Office Action explains that "9a camera can be arranged to sweep a specified or targeted area, see col. 14, lines 15-20) there by capturing said resulting high-resolution digital image of said original object, (a high-resolution image data to be taken by the camera, see col. 11, lines 58-60)." Page 3 of Office Action. The relied upon portion of *Thompson* merely discloses that the camera can be arranged to "sweep a specified area, either continuously, intermittently or on command, or may be controlled by a set of controls to look at any object within its field of view." Col. 14, lines 17-20 of *Thompson*. *Thompson* does not teach sweeping an image raster line once across a target scan area, thereby capturing a resulting high-resolution digital image of an original object. Rather, the sweeping of the camera taught by the relied-upon portion of *Thompson* is for positioning the camera to a desired field of view, and such sweeping of the camera is not taught as being used in the image capture process. That is, such sweeping is for positioning the camera to a desired view, and does not sweep an image raster line across a target scan area to capture a high-resolution digital image.

Thompson does not teach or suggest that its image capture process involves sweeping an image raster line across a target scan area. For instance, while *Thompson* generally mentions using an imaging device that may include a charge coupled device (CCD) or microbolometer array (*see* col. 4, lines 20-26), *Thompson* does not mention using a linear sensor or sweeping an image raster line across a target scan area in order to capture a high-resolution digital image. Rather, for instance, a two-dimensional image sensor such as that described by *Iyoda* (*see* col. 4, lines 24-28 of *Iyoda*) may presumably be used in *Thompson*, as is common in digital cameras, wherein an image of an area is captured without sweeping an image raster line across such area. Again, the sweeping of the camera discussed at col. 14, lines 15-20 of *Thompson* addresses positioning the field of view of the camera and not sweeping an image raster line over a target area in order to capture an image of such target area.

In view of the above, the applied combination of *Iyoda* and *Thompson* fails to teach or suggest all of the elements of independent claim 1, and thus fails to render claim 1 obvious under 35 U.S.C. § 103(a).

Independent claim 10

Independent claim 10 is rejected as being obvious under 35 U.S.C. § 103(a) over *Iyoda* in view of *Thompson*. Applicant respectfully traverses this rejection as set forth below.

i. Prima Facie Case of Obviousness not Established

First, the current Office Action fails to properly establish a prima facie case of obviousness with regard to independent claim 10. In making a rejection under 35 U.S.C. § 103(a), M.P.E.P. § 706.02(j) directs the Examiner to set forth in the Office action: (1) the relevant teachings of the prior art relied upon; (2) the difference or differences in the claim over the applied references; (3) the proposed modification of the applied references necessary to arrive at the claimed subject matter; and (4) an explanation why one of ordinary skill in the art at the time the invention was made would have been motivated to make the proposed modification. "Patent examiners carry the responsibility of making sure that the standard of patentability enunciated by the Supreme Court and by the Congress is applied in each and every case." M.P.E.P. § 2141 (emphasis in original). Further, "[o]ffice policy is to follow *Graham v. John Deere Co.* in the consideration and determination of obviousness under 35 U.S.C. 103." M.P.E.P. § 2141.

The current Office Action addresses claim 10 on page 6 thereof. While claim 10 stands rejected as being obvious under 35 U.S.C. § 103(a) over *Iyoda* in view of *Thompson*, the current Office Action fails to identify any element that is lacking from *Iyoda*, nor any element for which *Thompson* is relied upon, nor any motivation for relying upon *Thompson*. Indeed, the current Office Action makes no mention of *Thompson* in rejecting claim 10. Thus, applicant respectfully submits that a proper prima facie case of obviousness has not been established in the current Office Action with respect to claim 10.

ii. The Applied Combination Fails to Teach or Suggest All Elements

Further, claim 10 recites:

> linear sensor for imaging a raster line of an object placed substantially below said look-down digital imaging device; and
>
> lens for focusing reflected light from said object to said linear sensor, wherein said linear sensor receives a non-folded optical path of light reflected from said object

The current Office Action asserts that *Iyoda* teaches a linear sensor. Applicant respectfully disagrees. *Iyoda* fails to teach or suggest using a linear sensor, but instead specifically teaches utilizing a two-dimensional image sensor (*see* col. 4, lines 24-28 of *Iyoda*). The current Office Action relies in part on Fig. 11 of *Iyoda* in asserting that *Iyoda* teaches all elements of claim 10. However, neither Fig. 11 nor any other portion of *Iyoda* teaches utilizes a linear sensor for imaging a raster line of an object placed substantially below the look-down digital imaging device, as discussed further below. As described in the current application (*see* page 10, line 27 – page 11, line 10), with a linear sensor, "each 'exposure' captures a line across the original, which is typically referred to as a 'raster line.'" As discussed further below, *Iyoda* fails to teach use of a linear sensor for its imaging operations, but instead teaches using a two-dimensional area array sensor.

Iyoda teaches using an image reading apparatus, such as that shown in FIGURE 10 thereof to read an original image. "More specifically, the solid-state imaging device 15 is adjusted in direction by the gyro mechanism in the scan mechanism unit 1 so that the whole image on the original 103A can be read, and the reading (prescan) of the whole image is performed as a first reading process." Col. 4, lines 53-57. The image information is "corrected by a dark offset correction circuit 32b and a shading correction circuit 32c." Col. 4, line 67 - col. 5, line 1.

"The corrected information is transmitted to the image processing unit 34". Col. 5, lines 1-2. In the image processing unit 34, the image processing for the whole image is performed in accordance with the procedure shown in the flowchart of FIG. 2." Col. 5, lines 16-18. The image is processed using a Laplacian transform to detect edges in the image. Col. 5, line 19 - col. 6, line 2. "After completing the reading process for the whole image, a reading process (partial scan) is performed as the second reading process by the image reading portion 32 shown in FIG. 1 on areas which are obtained by dividing the original into a plurality of sections." Col. 6, lines 3-7. "In the reading process for the sectional or division images, the magnification and the focal point are adjusted so that a reading area 103b (the position (x(oi), y(oi)) where the division image, or sectional portion of the whole image, is intended to be read) is larger by Δx and Δy than a division image 103a of the original 103A which is to be read in a division manner using the horizontal and vertical scan mechanisms (FIG. 6)." Col. 6, lines 10-16. The captured division images are processed in the manner of

FIG. 2, and the whole image is acquired by connecting the division images. Col. 6, line 17 – Col. 7, line 20.

"According to the image reading apparatus of this embodiment, the process is performed with multiple resolutions. Namely, both the division images of the original 103A and the whole image are read. Coarse registration of the whole image and the division images is performed. Then, based on the coarse positions, the precise positions of the division images are obtained." Col. 7, lines 21-27. Accordingly, a coarse-resolution image(s) is captured, then further images are captured and are processed using a stitching algorithm to result in a higher-resolution image.

In view of the above, *Iyoda* does not teach using a linear sensor but instead teaches using two-dimensional image sensors, which it uses to image various portions of an object, and a stitching algorithm is then used to stitch together those portions to form a resulting image. When viewing Fig. 11 of *Iyoda*, it may appear to illustrate a look-down digital imaging device that has a linear sensor for imaging a raster line of an object placed substantially below the look-down digital imaging device. However, when considering the teaching of the text of *Iyoda* it becomes readily apparent that this is not the case. *Iyoda* states that "a first embodiment of the invention will be described with reference to FIGS. 1 to 11." Col 3, lines 66-67. Then, as mentioned above, *Iyoda* teaches a technique that uses a two-dimensional image sensor for capturing images of various portions of an object, and a stitching algorithm is then used to stitch together those portions to form a resulting image. FIGURE 11 illustrates an area 103b, and *Iyoda* explains that "In the reading process for the sectional or division images, the magnification and the focal point are adjusted so that a reading area 103b (the position (x(oi), y(oi)) where the division image, or sectional portion of the whole image ...." Col. 6, lines 10-16. The captured division images are processed in the manner of FIG. 2, and the whole image is acquired by connecting the division images. Col. 6, line 17 – Col. 7, line 20. *Iyoda* does not teach that the area 103b of FIGURE 11 is imaged using a linear sensor for imaging a raster line. Rather, *Iyoda* expressly teaches using a two-dimensional image sensor (*see* col. 4, lines 24-28 of *Iyoda*)..

Thus, *Iyoda* fails to teach or suggest all elements of claim 10, and therefore fails to render claim 10 obvious under 35 U.S.C. § 103(a). As mentioned above, *Thompson* is not relied upon as teaching or suggesting any of the elements of claim 10. Further, *Thompson*

fails to teach or suggest a linear sensor as recited by claim 10. Accordingly, the combination of *Iyoda* and *Thompson* fails to teach or suggest all elements of claim 10, and therefore fails to render claim 10 obvious under 35 U.S.C. § 103(a).

Dependent claims 2, 7-9, 11, and 14-15

Dependent claims 2, 7-9, and 14-15 stand rejected under 35 U.S.C. § 103(a) over *Iyoda* in view of *Thompson*. Dependent claims 2, 7-9, and 14-15 each depend either directly or indirectly from one of base claims 1 and 10, and thus inherit all limitations of their respective base claims. It is respectfully submitted that these dependent claims are allowable not only because of their dependency from their respective independent claims for the reasons discussed above, but also in view of their novel claim features (which both narrow the scope of the particular claims and compel a broader interpretation of the base claims from which they depend).

III. Claim Rejections Under 35 U.S.C. § 103(a) over *Iyoda* in view of *Oles*

Claims 17-18 and 21-23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Iyoda* in view of *Oles*. Applicant respectfully traverses this rejection below.

Independent claim 17

i. Applied Combination Fails to Teach or Suggest All Elements

Independent claim 17 recites "a look-down digital imaging device that includes means for imaging a raster line over a target scan area and means for focusing reflected light from said target scan area to said imaging means." The present Office Action relies upon *Iyoda* as teaching these elements of claim 17 (*see* page 7 of Office Action). However, *Iyoda* fails to teach a means for imaging a raster line over a target scan area. As discussed above with regard to claim 10, *Iyoda* only identifies two-dimensional area array sensors that are used for imaging a target area. As described in the current application (*see* page 10, line 27 – page 11, line 10), with a linear sensor, "each 'exposure' captures a line across the original, which is typically referred to as a 'raster line.'" Because *Iyoda* fails to teach use of a linear sensor for its imaging operations, but instead teaches using an area array sensor, it fails to teach sweeping an image raster line across at least a portion of said target scan area. That is,

because *Iyoda* only teaches using area array sensors, it fails to teach a means for imaging a raster line over a target scan area, as recited by independent claim 17. Further, *Oles* is not relied upon as teaching or suggesting this element of claim 17.

Additionally, claim 17 recites "means for capturing video data of said target scan area for providing a video preview of the target scan area before said imaging means captures an image of said target scan area." The current Office Action concedes that *Iyoda* fails to teach or suggest this element, *see* page 8 of Office Action. However, the Office Action asserts that *Oles* discloses this element. Applicant respectfully submits that *Oles* does not teach or suggest a means for capturing video data of a target scan area for "providing a video preview of the target scan area before said imaging means captures an image of said target scan area" (emphasis added). Rather, as discussed further below, *Oles* teaches a photographic system in which a photographic image and a video image are captured simultaneously such that the video image can be reviewed for evaluating the photographic image, rather than waiting for film development for evaluating such photographic image. Thus, the video image in *Oles* provides a preview of the captured photographic image before development of the film on which such photographic image is captured, rather than providing a preview of a target scan area before the image is captured, as recited in claim 17.

Col. 4, lines 11-38 of *Oles* provides:

> Photographic camera 51 also sends the activation signal to computer 54. After receiving the activation signal from photographic camera 51, computer 54 sends an activation signal to video charge coupled device (CCD) camera 50 to take or acquire a video image of subject 60. Video CCD camera 50 contains means for remote control of the video functions of the camera. After acquiring the video image of subject 60, video CCD camera 50 sends the video image to computer 54 for storage and later retrieval and viewing. The present invention, therefore, allows the photographer to synchronize the activation of video CCD camera 50 to the activation of photographic camera 51 to effectively duplicate the photographic image with a video image. And finally, video preview monitor 20, with a touchscreen interface, connects to computer 54 permitting the photographer and the customer/subject to view and manipulate the video images. Since the video images are effectively duplicates of the photographic images, video preview monitor 20, in conjunction with the rest of the present invention, allows the customer or the photographer to select the best photographic image or images more quickly than previously done by actually developing film because all of the video images are available on computer 54. Additionally, the overall cost is much lower because there is less photographic film to develop because the photographer knows exactly what

> image or images to develop (previously picked by the customer) rather than developing all of the photographic images as done previously. (Emphasis added).

In view of the above, *Oles* fails to teach or suggest "providing a video preview of the target scan area before said imaging means captures an image of said target scan area" (emphasis added), but instead captures the video image simultaneous with capture of a photographic image. The video image may then be viewed after the photographic image is captured, but provides a preview of the photographic image before development of the film.

Accordingly, the applied combination of *Iyoda* and *Oles* does not teach or suggest at least the above element of claim 17, and thus claim 17 is not obvious under 35 U.S.C. § 103(a) over this applied combination.

ii. Lack of Motivation to Combine Iyoda and Oles

Further, the current Office Action asserts that it "would have been obvious to configure image-reading device 1 of fig 11, of Iyoda et al., with imaging device of fig. 1, of Oles, for the purpose of the user view the video image before printed or outputted or stored in a memory disclosed by Oles". Page 8 of Office Action. However, because the video image of *Oles* is captured simultaneously with the photographic equipment, it would not provide a preview of the image before such image is stored in memory. Further, because the image captured by *Iyoda* is apparently a digital image, rather than a film-based photographic image as in *Oles*, one would not be motivated to include the additional video image equipment of *Oles* for obtaining an image that can be viewed prior to development of the photographic image.

In view of the above, claim 17 is not obvious under 35 U.S.C. § 103(a) over this applied combination.

Independent claim 22

i. Applied Combination Fails to Teach or Suggest All Elements

Independent claim 22 recites, in part, "a look-down digital imaging device that includes a linear sensor, wherein said look-down digital imaging device is operable to sweep

a raster line across a target area of an original object placed substantially below said look-down digital imaging device to capture an image of said target area by said linear sensor" (emphasis added). The present Office Action relies upon *Iyoda* as teaching this element of claim 22 (*see* page 9 of Office Action). As described above, *Iyoda* fails to teach a look-down digital imaging device that includes a linear sensor. Further, *Oles* is not relied upon as teaching or suggesting this element of claim 22.

ii. Lack of Motivation to Combine Iyoda and Oles

Further, the current Office Action asserts that it "would have been obvious to configure image-reading device 1 of fig 11, of Iyoda et al., with imaging device of fig. 1, of Oles, for the purpose of the user view the video image on a display before printed or outputted or stored in a memory". Page 10 of Office Action. However, as discussed above, because the video image of *Oles* is captured simultaneously with the photographic equipment, it would not provide a preview of the image before such image is stored in memory. Further, because the image captured by *Iyoda* is apparently a digital image, rather than a film-based photographic image as in *Oles*, one would not be motivated to include the additional video image equipment of *Oles* for obtaining an image that can be viewed prior to development of the photographic image.

In view of the above, claim 22 is not obvious under 35 U.S.C. § 103(a) over this applied combination.

Dependent claims 18, 21, and 23

Dependent claims 18, 21, and 23 stand rejected under 35 U.S.C. § 103(a) over *Iyoda* in view of *Oles*. Dependent claims 18, 21, and 23 each depend either directly or indirectly from one of base claims 17 and 22, and thus inherit all limitations of their respective base claims. It is respectfully submitted that these dependent claims are allowable not only because of their dependency from their respective independent claims for the reasons discussed above, but also in view of their novel claim features (which both narrow the scope of the particular claims and compel a broader interpretation of the base claims from which they depend).

IV. Claim Rejections Under § 103(a) over *Iyoda* in view of *Oles* and *Sears*

Dependent claims 3, 5, 12-13, 19, and 24 stand rejected under 35 U.S.C. § 103(a) over *Iyoda* in view of *Oles* and further in view of *Sears*. Dependent claims 3, 5, 12-13, 19, and 24 each depend either directly or indirectly from one of base claims 1, 10, 17, and 22, and thus inherit all limitations of their respective base claims. It is respectfully submitted that these dependent claims are allowable not only because of their dependency from their respective independent claims for the reasons discussed above, but also in view of their novel claim features (which both narrow the scope of the particular claims and compel a broader interpretation of the base claims from which they depend).

V. New Claims 26-53

New claims 26-53 are added herein. No new matter is added by these new claims. Claims 26-51 each depend either directly or indirectly from one of independent claims 1, 10, 17, and 22, and thus inherit all limitations of their respective base claims. It is respectfully submitted that these dependent claims are allowable not only because of their dependency from their respective independent claims for the reasons discussed above, but also in view of their novel claim features (which both narrow the scope of the particular claims and compel a broader interpretation of the base claims from which they depend).

Newly added independent claim 52 is also believed to allowable over the references of record. For instance, claim 52 recites in part "referring to said video data displayed on said display to determine if said object is arranged as desired for imaging; once the object is determined to be arranged as desired, triggering capture of a still image of said object; and responsive to said triggering, capturing said still image by a linear sensor by sweeping a raster line over the target scan area once resulting in capture of said still image of said object having resolution of at least 300 dpi." The applied references fail to teach or suggest all of these elements.

Claim 53 depends from independent claim 52, and thus inherit all limitations of claim 52. Claim 53 is believed to be allowable at least because of its dependency from claim 52.

Thus, these newly added claims are believed to be allowable over the applied art of record.

VI. Conclusion

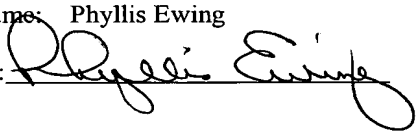
In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

The required fee for this response is enclosed. If any additional fee is due, please charge Deposit Account No. 08-2025, under 10001080-1 from which the undersigned is authorized to draw.

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail, Label No. EV 482738493US in an envelope addressed to: M/S Amendment, Commissioner for Patents, Alexandria, VA 22313.

Date of Deposit: August 27, 2004

Typed Name: Phyllis Ewing

Signature: 

Respectfully submitted,

By: 

Jody C. Bishop
Attorney/Agent for Applicant(s)
Reg. No. 44,034
Date: August 27, 2004
Telephone No. (214) 855-8007